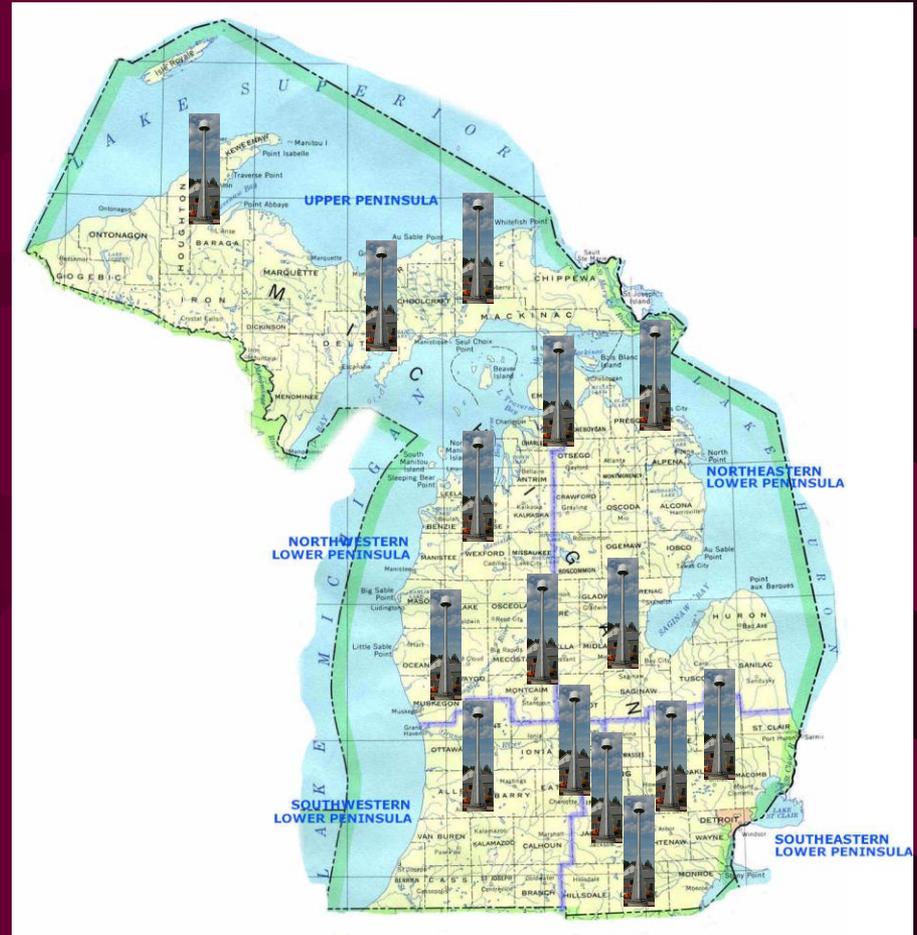


MDOT CORS

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Michigan Spatial Reference Network

- The Michigan Spatial Reference Network consists of 15, soon to be 17 CORS.
- The system was originally developed for selfish reasons of supporting MDOT's own surveying and mapping operations.
- We were not fully aware of what other functions the system could serve.



What Happened Next

- After MDOT had committed to the project and learned more about the systems implications, and, about the National CORS network, we should become part of the National CORS network.
- We were somewhat disheartened when we *thought* that being part of the National CORS meant we would have to relinquish control of our system as we wanted to maintain that control.
- This is when we learned about the **Cooperative CORS** concept.
- We decided to sign on.

Transition Period

- After becoming part of the cooperative CORS, we attended last years CORS forum and learned about OPUS.
- We thought it would be advantageous for our stations to be part of the OPUS solution.
- In order to be part of OPUS, we had to be part of the National CORS Network.
- Richard Snay had indicated that we could be part of the National CORS and *still* maintain control of our own system.
- Needless to say the partnership began.
- Several months later the concept of **COMBO-CORS** came into being. This addressed MDOT's concerns.

Cooperation



Use of the Current System

- ⊕ Once the system was in place, we discovered that a discrepancy existed between Michigan's HARN network and the position of the **Michigan Spatial Reference Network** relative to the National CORS.
- ⊕ We worked in cooperation with NGS to reconcile the differences between the the Michigan HARN positions and the CORS positions
- ⊕ MDOT's part was to occupy the HARN. We mobilized the Private Sector Surveyors and MDOT crews to re-occupy the HARN.
- ⊕ 70 receivers occupied the HARN simultaneously on three separate occasions, the last occupation was the morning of Sept. 11, 2001.
- ⊕ We are anxious to receive the reconciled positioned back from NGS.

Issues

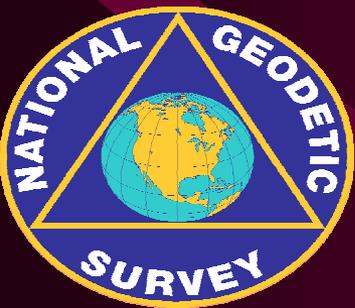


Bumps along the way.

- One of the problems we encountered was getting data reliably transferred to NGS. Given the size of the files (1 second epochs) and the number of stations being transferred, we were encountering network timeout issues.

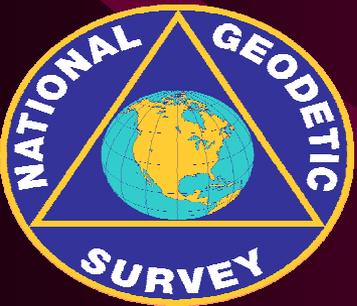
Expanding the Partnership

- ⊕ We are currently in the process of completing Lease agreements between MDOT and NOAA's Forecast Systems Laboratory.
- ⊕ This hopefully leads to the installation of more MET sensors by the FSL.
- ⊕ MDOT is currently working with several Michigan Counties who want to install CORS stations and make it part of the Michigan Spatial Reference Network.



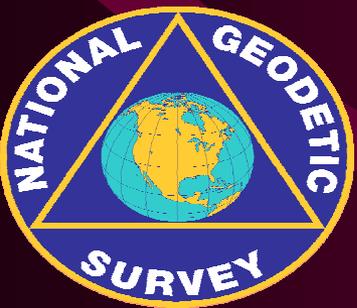
State wide COMBOCORS

- Counties who want to join the **Michigan Spatial Reference Network** have to design their monuments and installations based on the MDOT model. They want their data available on the MDOT website and want to have MDOT continue the partnership already established with NGS.
- All data received from the county CORS installations will be forwarded to NGS to be included as part of the COMBOCORS.
- This process will be transparent to NGS.
- The **Michigan Spatial Reference Network** will be densified with help from the local counties.



Satisfaction

- We have been very pleased with the level of cooperation that NGS has shown toward this project.
- The NGS CORS team has been very helpful in assisting us with this project.
- We look forward to the continued cooperation as we watch this system evolve and grow.



Questions?

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